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Constraints in Traditional Shrimp Farming in West Bengal

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INTRODUCTION

Presently, nearly 1,44,600 ha of coastal saline lands are used for shrimp culture in India (MPEDA, 1999-00). West Bengal is a sleeping giant and has acquired a position only next to the topper, Andhra Pradesh in production of shrimp. The total brackish water area developed for shrimp farming in West Bengal is 55,575 ha having a water spread area of 42,754 ha. (Upadhyay, 2001). Shrimp farming in West Bengal has made strident progress since mid 80s, thereby contributing nearly 25% of the total production of shrimp and prawn in the country (Bulletin of Dept. of Fisheries WB, 2000).

The state presently has 18 fishery districts comprising of 306 fishery blocks. Out of these, shrimp farming is concentrated mainly in three districts, The district wise development of shrimp farming in West Bengal (1999-2000), is presented below.

District	Area developed so far (ha.)	Estimated production (metric tonnes)
North 24 Parganas	29,026	13,550
South 24 Parganas	10,386	4,850
Midnapore	3,342	1,560
Total	42,754	19,960

Source: (Upadhyay, 2001 & Dept. of Fisheries, WB, 2000)

While 34,523 ha of area are presently being used for traditional / improved traditional shrimp farming in West Bengal, another 3957 ha are under North 24 Parganas and South 24 Parganas districts while the second Midnapore district (Bulletin of Dept. of Fisheries, WB, 2000) type is mainly concentrated at traditional shrimp farming, based on tidal influence is practiced in low lying areas and shallow brackish water bodies (10 to 100 ha.) enclosed by crude earthen bunds locally known as 'bheri'. Annual production of tiger shrimp, (*Penaeus monodon*) from these bheris is very low (200-350kg/ha.). Hence, a field level survey was undertaken with the objective of identifying the major constraints affecting the yield in traditional shrimp farming.

Area of Study

The survey was undertaken in two coastal blocks of South 24 Parganas district where shrimp farms are densely located.

Selection of Sample

Respondents for the study comprised of 80 shrimp farmers, selected by random sampling from four villages, such that two villages represented each block and 20 shrimp farmers represented each village Pre tested interview schedule was used for data collection, and respondents. were interviewed personally, keeping in view the objective of the survey.

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Analysis of data

Tabular analysis with arithmetic means and percentages were used to estimate the various constraints reported by the farmers.

FINDINGS AND DISCUSSION

Reasons for low yield were attributed to certain impediments, which were identified by the respondents as follows:

1. Non availability of good quality seeds

The reasons for non availability of good quality seeds are depicted in Table 1:We can see from the table that less number of hatcheries which cannot meet even 10% of the total seed requirement forms the main reason for non availability of good quality seeds. Seeds from natural sources often carry the deadly white spot disease and introducing such wild seeds without quarantine leads to heavy losses due to mass mortality of the whole batch of shrimp. But insufficient number of hatcheries cannot meet the need for healthy, hatchery-bred seeds. Other than this, involvement of unscrupulous middlemen charging high rates for transportation and poor quality of packaging during transportation also form valid reasons. Seeds need to be acclimatized twice, once before they are transported and again before they are stocked. A small percentage of the respondents opined that no acclimatization of seed affects their quality.

2. Non availability of good quality feed

The reasons for the non availability of good quality feeds are depicted in Table 2: It is seen from table 2 that, high cost of feed ingredients formed the primary reason for non availability of good quality shrimp feed. Feed cannot be stored properly due to lack of proper storing barns. This leads to a depreciation of their quality, according to 55 percent of the farmers. Farmers also opined that feeds often become infested with mould as a result of inadequate storage as well as inconsistent quality of feed ingredients. When asked whether they are aware about good storage practices, about 26.25 percent commented on the negative.

3. Incidence of White spot disease

The incidence of white spot disease has been a major setback for the shrimp industry, washing out whole crops at a time. Table 3 shows the reasons for rampant attack of the disease in recent times as perceived by the farmers. About 47.5 percent of the shrimp farmers felt the necessity of ready to use, user friendly disease diagnostic and remedial kits for quick remedy of such deadly diseases. 27.5 percent of them were aware of the fact that excess organic matter deposition in bottom soil of pond due to wasted feed, faeces, fertilizers and chemicals causes bottom soil to degrade very fast, giving rise to toxic components which are responsible for causing stress to the animals and making them weak and susceptible to the deadly disease. Even though poor management of water quality has been found to be one of the important reasons behind occurrence of WSD, it was surprising that a very meagre 10 percent of the respondents opined about it.

4. Inadequate technical guidance from extension personnel

Respondents were asked to state the reasons for receiving inadequate technical guidance from extension personnel. The data revealed that extension personnel were transferred very frequently. This gave them less time to be acquainted with the problems specific to that area and offer time-tested solutions. About 25 percent of the farmers strongly resented the habits of groupism and favoritism of personnel, giving undue preference to some farmers over others. This created undesirable misunderstandings and quarrels among farmers. About 20 percent of the respondents complained that many a time, scientific terms used by extension personnel were unfamiliar to them and hence they were unable to understand. About 20 percent of the

Table 1: Reasons for the non availability of good quality seeds

S.No.	Reasons	No. of farmers who reported (N=80)	% of farmers who reported (N=80)
1.	Less no. of hatcheries who cannot meet even 10% of total seed requirements	48	60
2.	Involvement of dishonest and unscrupulous middlemen	44	55
3.	High charges for transportation of quality seeds from hatcheries, natural sources	32	40
4.	Poor quality packaging lead to mortality and stress	24	30
5.	No acclimatization of seed before stocking	8	10

Table 2: Reasons for non availability of good quality feeds.

S.No.	Reasons	No. of farmers who reported (N=80)	% of farmers who reported (N=80)
1.	High cost of feed ingredients	48	60
2.	Inadequate storage facility for feed	44	55
3.	Inconsistent quality of feed ingredients	28	35
4.	Lack of knowledge of farmers about good storage practices	21	26.25

Table 3: Reasons for incidence of White spot disease.

S.No.	Reasons	No. of farmers who reported (N=80)	% of farmers who reported (N=80)
1.	Ready to use disease diagnostic and remedial kits not available commercially	38	47.5
2.	Excess organic matter in bottom soil of pond not removed	22	27.5
3.	Water quality not strictly managed	8	10

respondents complained that many a time, scientific terms used by extension personnel were unfamiliar to them and hence they were unable to understand.

5. Poor cooperation among farmers

Competition is detrimental to cooperation. About 45 percent of the respondents agreed to this fact. Besides competition, illiteracy and ignorance was largely responsible for illogical quarrels. A small number of illiterate and ignorant farmers fell easy prey to middlemen and dishonest vendors who supply them inferior inputs in the name of superior ones, at lower prices. Due to lack of knowledge and absence of their own rational reasoning ability, these farmers are easily fooled and are not prepared to listen to warnings from their literate colleagues. This has a negative bearing on production.

6. Inadequate credit support from government sponsored institutions and NGOs

About 50 percent of the respondents opined that improper land leasing policy and incidence of white spot disease have reduced credit support from government institutions and NGOs for coastal shrimp farming. Supreme court judgement on Coastal Regulation Zones (CRZ Act, 1996), stating that no culture activity could be undertaken within 500metres of the coastline, has also seriously affected credit flow.

7. Lack of updated information about price trend of shrimp produce

As is evident from Table 7, irregularities in availability of newspapers, leaflets, bulletins, results in non availability of updated information about the price trend of shrimp, as opined by 46.25 percent of the respondents. About 37.5 percent of them felt that unreliable and irregular information flow from market functionaries about fluctuations in prices of shrimp was another reason for lack of updated information about shrimp prices.

CONCLUSION

The following conclusions can be drawn from the above study:

There is substantial scope for reducing the yield loss by way of strengthening the transfer of technology mechanism at the field level. The training of farmers on management practices relating to shrimp culture, establishment of field laboratories for disease diagnosis and remedy, soil and water quality testing, effective exploitation of mass media enhanced research support for use of immunomodulators in shrimp, development of small scale hatcheries to meet the seed requirements, formulation of cost effective, high quality feeds from ingredients available locally and integrated approach of different stakeholders involved in aquaculture development will pave the way for sustainable shrimp culture development in the long run. The findings of the study also indicate a need for formulation of certain policy measures to strengthen credit supply, storage and marketing of produce.

Table 4: Reasons for inadequate technical guidance from extension personnel.

S.No.	Reasons	No.of farmers who reported (N=80)	% of farmers who reported (N=80)
1.	Frequent transfers of extension personnel	56	70
2.	Groupism and favouritism habit of personnel	20	25
3.	Communication gap	16	20

Table 5: Reasons for poor cooperation among farmers.

S.No.	Reasons	No. of farmers who reported (N=80)	% of farmers who reported (N=80)
1.	Competition	36	45
2.	Illiteracy and ignorance	12	15

Table 6: Reasons for inadequate credit support from government sponsored institutions and NGOs.

S.No.	Reasons	No. of farmers who reported (N=80)	% of farmers who reported (N=80)
1.	Improper land leasing policy	40	50
2.	Incidence of white spot disease	40	50
3.	Supreme Court judgment on CRZ	36	45

Table 7: Reasons for lack of updated information about price trend of shrimp.

S.No.	Reasons	No. of farmers who reported (N=80)	% of farmers who reported (N=80)
1.	Poor mass media support (newspaper, leaflet, bulletins)	37	46.25
2.	Unreliable information from market functionaries	30	37.5

REFERENCES

Anon, 1999-00., *Marine Products Export Review 1999, The Marine Products Export Development Authority, Kochi.*

Anon, 2000., Fisheries Department, Govt. of West Bengal, *Looking Back.*

Choudhury, S., 1999.,Vision of West Bengal Fisheries Department on Aquaculture Development., *Aquaculture and Fishery Vision, 55-66.*

Bhaumick, U., 2001., Status of Freshwater Prawn Farming in West Bengal., *Fishing Chimes, 21-1, 84-87.*

Upadhyay, A.S., 2001., Shrimp and prawn farming development in West Bengal: Present status, constraints and strategy., *Fishing Chimes. 20-10&11, 91-98.*